REMARKS/ARGUMENTS

Claims 70-101 were pending in the present application and stand rejected.

Applicant has amended claims 70, 78, 81-84, 86-88, 91-94, 96, and 98, canceled claims 79, 80, 85, 100 and 101 without prejudice, and added new claims 103-110. Applicant submits that no new subject matter has been inserted by the amendments or the new claims and support for the amendments and the new claims is found in the specification. Claims 70-78, 81-84, 86-99 and claims 103-110 remain pending in this application after entry of this amendment.

Reconsideration of the rejections is requested in light of the remarks below.

CONTINUATION APPLICATION

Applicant would like to draw the Examiner's attention to related U.S. Patent Application No. 11/741,480 filed April 27, 2007, which is a continuation of the present application. A Terminal Disclaimer was recently filed in Application No. 11/741,480 on January 29, 2008. A copy of U.S. Patent Application No. 11/741,480 and its prosecution history are available on Private PAIR and are believed to be readily accessible to the Examiner.

TELEPHONE INTERVIEW

Applicant would like to thank Examiner Salad for the telephonic interview for this application conducted on March 13, 2008. The patentability arguments presented to the Examiner during the telephonic interview are presented below. A Statement of Substance of Interview is being filed herewith.

THE CLAIMS

Claims 70-101 are rejected under 35 U.S.C. §103(a) as being unpatentable over Logan et al (U.S. Patent No. 6,578,066) (hereinafter "Logan") in view of Andrews et al (U.S. Publication No. 2002/0038360) (hereinafter "Andrews"). Applicant respectfully traverses the rejections.

Claims 70-85, 91-95, and 100-101

Applicant submits that claim 70 recites features that are not taught or suggested by Logan and Andrews, considered individually or in combination. For example, claim 70 recites

> storing, in a load balancing switch of the data network, round trip time data for a plurality of host server site switches, wherein the round trip time data for a host server site switch from the plurality of host server site switches indicates a time for exchanging at least one message between the host server site switch and a first client machine of the data network, wherein each host server site switch from the plurality of host server site switches is associated with one or more host servers of the data network, the one or more host servers associated with a host server site switch being reachable via the host server site switch; and
>
> ordering, in the load balancing switch, a plurality of network addresses, the plurality of network addresses being responsive to a query regarding a ~~domain~~ host name, the plurality network addresses determined from resolution of the host name, the plurality of network addresses comprising network addresses of multiple host server site switches from the plurality of host server site switches, wherein the load balancing switch is capable of ordering the plurality of network addresses based, at least in part, on the round trip time data stored for the multiple host server site switches.. (Applicant's claim 70).

As recited above, claim 70 recites a load balancing switch, a plurality of host server site switches, and host servers. Each host server site switch is associated with one or more host servers, the one or more host servers associated with a host server site switch being reachable via the host server site switch. The load balancing switch stores round trip time data for the plurality of host server site switches, where the round trip time data for a host server site switch indicates a time for exchanging at least one message between the host server site switch and a first client machine.

Further, claim 70 specifically recites ordering a plurality of network addresses determined from resolution of a host name identified in a query, the plurality of network addresses comprising network addresses of multiple host server site switches from the plurality of host server site switches. The ordering is performed based, at least in part, on the round trip time data stored for the multiple host server site switches.

Applicant would like to point out that the plurality of network addresses that are ordered comprise network addresses of the host server site switches -- not addresses of the host servers. Each host server site switch is associated with one or more host servers that are reachable via the host server site switch with which they are associated. Further, Applicant would like to emphasize that ordering a plurality of network addresses is substantially different from merely picking a network address with the shortest round trip time.

The Office Action acknowledges that Logan is silent about round trip time (Office Action: page 3). The Office Action however goes on to assert that the round trip time related features are taught by Andrews. The Office Action states:

> Andrews discloses in analogous art a system and method for locating a closest server in response to a client domain name request including wherein the round trip time data a time for exchanging at least one message between a first host, and a first client machine (see paragraphs 0103-0105 and table 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention presented with teachings of Logan to incorporate the round trip measuring mechanism as suggested by Andrews, thereby selecting nearby content server having the least round trip time for responding to a client request. (Office Action: page 3)

Further, in the Response (page 2) section of the Office Action, the Examiner states that although Logan does not specifically show using metrics such as round-trip time, to order the network addresses, one of ordinary skill would have readily recognized that using such a metric would have been within the scope of Logan's invention, because the round-trip time metric is commonly used in load-balancing systems such as the system in Logan. Further, the Examiner asserts that since Andrews teaches a round trip metric (Andrews: paragraphs 0032 and 0045), it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Andrews in Logan.

Applicant respectfully disagrees and submits that a combination of Logan and Andrews does not render claim 1 obvious. The Office Action asserts that Logan teaches ordering of IP addresses. However, in Logan the ordering is not done based upon round trip time, as recited in claim 70 as acknowledged by the Office Action. Further, this feature is also not taught by Andrews.

Andrews describes a system for resolving DNS queries in a client-dependent manner and for identifying one or more content servers in the network that satisfy the client request with minimum round trip time. Andrews describes a clustering/mapping operation that first performs a clustering operation which creates client clusters (i.e., groups of clients having similar network distance properties), the client clusters are then input to a mapping operation which maps or associates the client clusters with best-performing content servers in the network. The clustering operation partitions clients into groups or clusters according to CIDR address prefix similarity and also load and distance information from each content server in the network. The created client clusters are then provided as input to a mapping operation which maps or associates the client clusters to best-performing content servers in the network. A content server is considered to be best-performing with respect to a client cluster by having low round trip time in response to content requests from clients located within the client cluster. (For example, see Andrews paragraph 0026).

Paragraph 0032 of Andrews, identified in the Office Action, describes that in response to a client request, a redirection server responds by returning the IP address of a content server determined to be a preferred content server. Paragraph 0045 of Andrews describes that one way of measuring network distance is computing round trip time (RTT), defined as the time taken for a packet to travel from server to client and back again.

However, as previously mentioned, as recited in claim 70, the round trip time data is time for exchanging at least one message between a host server site switch and a first client machine, where each host server site switch is associated with one or more host servers, the one or more host servers associated with a host server site switch being reachable via the host server site switch. Applicant submits that Andrews fails to teach that a server (which is used for round trip time determination in Andrews) is associated with one or more host servers, the one or more host servers associated with a host server site switch being reachable via the host server site switch, as recited in claim 70. Applicant thus submits that the round trip time data, as recited in claim 70, is not taught by Andrews.

Further, in Andrews, the network distance metric (i.e., round trip time) is used for clustering the clients -- not for ordering a plurality of network addresses comprising network

addresses of host server site switches, as recited in claim 70. Accordingly, there is no teaching in paragraphs 0032 and 0045 of Andrews that an ordering of a plurality of network addresses corresponding to host server site switches based upon round trip time is performed, as recited in claim 70.

Further, Table IV and paragraphs 0103-0105 of Andrews also fail to teach this concept. Table IV on page 8 of Andrews depicts the output of the clustering operation performed in Andrews. Again, this is clustering of clients and not ordering of network addresses as recited in claim 70. Applicant further submits that an ordering operation based upon round trip time, as recited in claim 70, is completely different from the clustering operation described in Andrews.

As previously indicated, in Andrews, the output of the clustering operation is input to a mapping operation that pairs each identified client cluster with one or more preferred content servers in the network. Table IV depicted on pg. 9 of Andrews depicts an output of the mapping operation. For example, each row of Table IV on pg. 9 identifies a particular client cluster, one or more preferred content servers for the cluster, a testing index, and a selection probability, which is assigned to each preferred content server in the table to ensure that the respective maximum service capacities of each content server are never exceeded. Applicant however submits that Table IV on pg. 9 does not show any ordering of network addresses based upon round trip time data, as recited in claim 70.

Paragraphs 0103-0105 of Andrews describe FIG. 4 in Andrews depicting a first column of nodes 32a-f and a second column of nodes 34a-g. Nodes 32a-f represent client cluster, domain index pairs. These nodes can be considered demand nodes in that each pair defines a requestor (i.e., client cluster) and the requested content (i.e., domain index). Nodes 34a-g represent all content servers in the network and can be considered resources for satisfying the requesting nodes 32a-f. The directed arrows represent the flow from demand nodes 32a-f to resource nodes 34a-g. Each directed arrow defines a distance from a demand node (client cluster) to a resource node (cache). These distances may be obtained directly from the output of the clustering algorithm. Andrews describes that an objective of the assignment operation to push flow from the demand nodes to the resource nodes in such a way that the majority of flow

is conducted along directed arrows whose distance values are small thereby promoting minimum round trip time while not overloading the resource nodes 34a-g. Andrews then goes on to describe in paragraph 0105 how promotion of minimum round trip time while preventing overloading at the content servers is achieved using a capacity value assigned to each resource node 34a-g on the right defining each node's service capacity and assigning a demand value to each node 32a-g which defines the amount of demand from each client cluster for each domain.

Applicant thus submits that paragraphs 0103-0105 of Andrews describe processing related to client clusters but do not teach any ordering of network addresses as recited in claim 70. Andrews seems to teach selecting a content server with the minimum round trip time to a client cluster, but does not teach ordering of network addresses based upon the round trip time data. As previously pointed out, a round trip time associated with a content server as described in Andrews is different from round trip time data for a host server site switch, as recited in claim 70. Further, ordering a plurality of network addresses is substantially different from merely picking a network address. Applicant thus submits that paragraphs 0103-0105 of Andrews fail to teach or suggest ordering a plurality of network addresses based, at least in part, on the round trip time data, as recited in claim 70.

In light of the above, Applicant submits that Andrews fails to teach or suggest at least the "round trip time data" and "ordering . . ." features recited in claim 70. Accordingly, the deficiencies of Logan are not cured by Andrews.

Further, Applicant submits that it would not have been obvious to one skilled in the art to use the network distance (round trip time), as described in Andrews, for the processing in Logan. In Logan, the handoffs between servers are done based upon response times between the servers and loads of the servers (as described in cols. 7 and 8 of Logan) and the geographical location of the requesting client to the server sites (as described in cols. 9 and 10 of Logan). As a result, there is no need to use the round trip time, as described in Andrews, for the processing in Logan.

In light of the above, Applicant submits that even if Logan and Andrews were combined as suggested by the Office Action, the resultant combination would not teach or

suggest Applicant's claim 70. Applicant thus submits that claim 70 is patentable over a combination of Logan and Andrews.

Applicant submits that claims 71-85 that depend from claim 70 are also patentable over a combination of Logan and Andrews for at least a similar rationale as discussed above for claim 70. The dependent claims are also patentable for additional reasons.

Applicant further submits that independent claim 91 is also allowable over a combination of Logan and Andrews for at least a similar rationale as discussed above for claim 70. Claims 92-95 that depend from claim 91 are also patentable for at least a similar rationale as discussed above for the allowability of the claim 91. The dependent claims are also patentable for additional reasons.

Claims 100 and 101 have been canceled without prejudice.

Claims 86-90 and 96-99

Arguments for patentability of this claim were presented in the previous response filed on February 7, 2007. The Examiner however failed to provide a response to these arguments in the latest Final Office Action dated October 30, 2007. During the telephonic interview with the Examiner, Applicant pointed out some of the novel features of claim 86. The Examiner indicated that he now had a better understanding of claim 86 and would review the claim based upon this understanding.

As discussed with the Examiner during the telephone interview, claim 86 specifically recites, in part:

> selecting, from a plurality of network addresses determined responsive to the query, a best network address based, at least in part, on which of the plurality of network addresses has been least recently selected by the load balancing switch as a best network address in response to previous queries. (Applicant's claim 86, in part)

As recited above in claim 86, a best network address is selected based, at least in part, on which network address from the plurality of network addresses has been least recently selected as the best network address in response to previous queries. Applicant submits that at least this concept recited in claim 86 is not taught or suggested by a combination of Logan and Andrews.

The Office Action acknowledges that Logan is silent regarding the "selecting . . ." feature of claim 86 (Office Action dated 10/30/07: top of page 5). The Office Action however asserts that this feature is taught by Andrews in paragraphs 0029 and 0032. The Office Action asserts:

> Andrews discloses in analogous art a system and method for locating a closest server in response to a client domain name request including selecting network addresses that has been least recently selected (see paragraphs 0029 and 0032). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention presented with teachings of Logan to incorporate the round trip measuring mechanism as suggested by Andrews, thereby enabling selecting a content server with best response time.

Applicant respectfully disagrees and submits that the deficiencies of Logan are not cured by Andrews. In particular, Applicant submits that Andrews fails to teach or suggest anything about selecting, from a plurality of network addresses, a best network address based, at least in part, on which of the plurality of network addresses has been least recently selected by a load balancing switch as a best network address in response to previous queries, as recited in claim 86.

As discussed above with regards to claim 70, Andrews describes clustering and mapping operations in order to select a best-performing content server. However none of these operations in Andrews perform selections based upon a least recently selected metric, as recited in claim 86. Paragraph 0029 of Andrews describes how a client clusters table is used when a client request for a particular domain is received. In response to a client request, a relevant row in the table is first determined based upon the client's IP address prefix. A best-performing content server is then selected from the servers listed in that row. A selection probability associated with servers in a row along with a random number is used to randomly select one content server as the best candidate.

Applicant however submits that paragraph 0029 of Andrews does not teach anything about selecting a best network address from a plurality of network addresses based on which of the plurality of network addresses has been least recently selected by the load balancing switch as a best network address in response to previous queries, as recited in claim 86. Paragraph 0029 fails to teach that a content server is selected as the best-performing content

server based upon a least recently selected metric. There is no teaching or suggestion in paragraph 0029 of Andrews that the selective probabilities and/or random number used to select a server in Andrews have anything to do with which server was least recently selected as the best-performing content server. Applicant thus submits that paragraph 0029 of Andrews fails to teach the feature of selecting a network address from a plurality of network addresses as the best network address based on which of the plurality of network addresses has been least recently selected as a best network address in response to previous queries, as recited in claim 86.

Paragraph 0032 of Andrews teaches that clients make domain name (DNS) requests to local DNS servers (as depicted in Fig. 1 of Andrews). The local DNS server forwards the client request to a redirection server. The redirection server responds to the client request by returning to the client the IP address of a content server in the network determined to be a preferred content server. However, there is nothing in this paragraph to teach or suggest that the preferred content server is one that has been selected as recited in claim 86. Applicant thus submits that this paragraph of Andrews also fails to teach or suggest anything about selecting a network address from a plurality of network addresses as the best network address based on which of the plurality of network addresses has been least recently selected as a best network address in response to previous queries, as recited in claim 86.

In light of the above, Applicant submits that neither Logan nor Andrews teach or suggest the "selecting . . ." step recited in claim 86. Applicant thus submits that even if Logan and Andrews were combined as suggested by the Office Action, the resultant combination would not teach this feature recited in claim 86. Applicant thus submits that claim 86 is patentable over a combination of Logan and Andrews for at least the reasons stated above.

Applicant submits that dependent claims 87-90 that depend from claim 86 are also patentable over a combination of Logan and Andrews for at least a similar rationale as discussed above for claim 86. The dependent claims are also patentable for additional reasons.

Applicant submits that independent claim 96 is patentable over a combination of Logan and Andrews for at least a similar rationale as discussed above for claim 86. Applicant further submits that dependent claims 97-99 that depend from claim 96 are also patentable for at

least a similar rationale as discussed above for claim 96. The dependent claims are also patentable for additional reasons.

New Claims

New dependent claims 103-110 have been added to claim further aspects of embodiments of the present invention. Applicant submits that these claims are in a condition for allowance.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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